such acid, it is violently acted upon; but when rendered the positive electrode, although oxidised and dissolved, the process, comparatively, is extremely slow.

Gold has the same power over iron immersed in the nitric acid that platina has. Even silver has a similar action; but from its relation to the acid, the effect is attended with peculiar and changeable results, which I will refer to hereafter.

A piece of box-wood charcoal, and also charcoal from other sources, has this power of preserving iron, and bringing it into the inactive state. Plumbago, as might be expected, has the same power.

When a piece of bright steel was first connected with a piece of platina, then the platina dipped into the acid, and lastly the steel immersed, according to the order directed in the former cases by Professor Schoenbein, the steel was preserved by the platina, and remained clear and bright in the acid, even after the platina was separated from it, having, in fact, the properties of the inactive iron. When immersed of itself, there was at first action of the usual kind, which, being followed by the appearance of the black carbonaceous crust, known so well in the common process of examining steel, the action immediately ceased, and the steel was preserved, not only at the part immersed, but upon introducing a further portion, it also remained clean and bright, being actually protected by association with the carbon evolved on the part first immersed.

When the iron is in this peculiar inactive state, as M. Schoenbein has stated, there is not the least action between it and the nitric acid. I have retained such iron in nitric acid, both alone and in association with platina wire for thirty days, without change; the metal has remained perfectly bright, and not a particle has been dissolved.

A piece of iron wire in connection with platina wire was entirely immersed in nitric acid of the given strength, and the latter gradually heated. No change took place until the acid was nearly at the boiling-point,

when it and the iron suddenly entered into action, and the latter was instantly dissolved.

As an illustration of the extent and influence of this state, I may mention that with a little management it can be shown that the iron has lost, when in the peculiar state, even its power of precipitating copper and other metals. A mixture of about equal parts of a solution of nitrate of copper and nitric acid was made. Iron in the ordinary, or even in the peculiar state, when put into this solution, acted, and copper was precipitated;